

## Claims

What is claimed is:

1. A canola seed of line designated 45A55, representative seed of said canola line 45A55 having been deposited under ATCC Accession No \_\_\_\_\_.
- 5 2. A canola plant, or parts thereof, produced by growing the seed of claim 1.
3. The canola plant of claim 2 wherein said plant has been manipulated to be male sterile.
4. The canola plant of claim 2 further comprising a component for fertility restoration of a male sterile plant.
- 10 5. A tissue culture of regenerable cells from the plant of claim 2.
6. A canola plant regenerated from the tissue culture of claim 5.
7. A method for producing a first generation (F<sub>1</sub>) hybrid canola seed comprising: crossing the plant of claim 3 with a different fertile canola plant and harvesting the resultant first generation seed.
- 15 8. An F<sub>1</sub> hybrid seed produced by the methods of claim 7.
9. An F<sub>1</sub> hybrid plant or parts thereof, grown from the seed of claim 8.
10. A method for developing a canola plant in a canola breeding program comprising: obtaining the canola plant or its parts, of claim 2; and employing said plant or parts as a source of breeding material.
- 20 11. The method of claim 10 wherein said plant breeding techniques are selected from the group consisting of: recurrent selection, mass selection, bulk selection, backcrossing, pedigree breeding, open pollination, restriction fragment length polymorphism enhanced selection, genetic marker enhanced selection, making double haploids and transformation.
- 25 12. A canola plant or parts thereof produced by the method of claim 10, wherein the pedigree of said canola plant includes 5 or less cross-pollinations to a canola plant other than canola line 45A55.
13. A 45A55-derived canola plant, or parts thereof, wherein at least one ancestor of said 45A55-derived canola plant is the canola plant of claim 2, and wherein the
- 30 pedigree of said canola plant includes 5 or less cross-pollinations to a canola plant other than canola line 45A55.
14. The canola plant or parts thereof of claim 2 wherein the plant or parts thereof further comprise one or more transgenes.
15. A method for developing a canola plant in a canola breeding program using
- 35 plant breeding techniques, which include employing a canola plant, or its parts, as a

source of plant breeding material, comprising: obtaining the canola plant, or its parts, of claim 14 as a source of said breeding material.

16. A canola plant or parts thereof produced by the method of claim 15, wherein the pedigree of said canola plant includes 5 or less cross-pollinations to a canola plant other than canola line 45A55.

17. An F1 hybrid seed produced by crossing the plant of claim 14 with a different canola line and harvesting the resultant F1 hybrid canola seed.

18. An F1 hybrid canola plant or parts thereof grown from the seed of claim 17.

19. The canola plant of claim 2, further comprising one or more single gene conversions.

20. An F1 hybrid seed produced by crossing the plant of claim 19 with a different canola line and harvesting the resultant F1 hybrid canola seed.

21. An F1 hybrid canola plant or parts thereof grown from the seed of claim 20.

22. A canola plant, or parts thereof, having all the physiological and morphological characteristics of canola line 45A55, representative seed of said line having been deposited under ATCC accession No. \_\_\_\_\_.

23. The canola plant of claim 22 wherein said plant has been manipulated to be male sterile.

24. The canola plant of claim 22 further comprising a component for fertility restoration of a male sterile plant.

25. A tissue culture of regenerable cells from the plant of claim 22.

26. A canola plant regenerated from the tissue culture of claim 25.

27. A method for producing a first generation (F<sub>1</sub>) hybrid canola seed comprising: crossing the plant of claim 23 with a different fertile canola plant and harvesting the resultant first generation (F<sub>1</sub>) hybrid seed.

28. An F1 hybrid seed produced by the method of claim 27.

29. An F1 hybrid plant or parts thereof, grown from the seed of claim 28.

30. A method for developing a canola plant in a canola breeding program using plant breeding techniques, which include employing a canola plant, or its parts, as a source of plant breeding material, comprising: obtaining the canola plant, or its parts, of claim 22; and employing said plant as a source of said breeding material.

31. The method of claim 30 wherein said plant breeding techniques are selected from the group consisting of: recurrent selection, mass selection, bulk selection, backcrossing, pedigree breeding, open pollination, restriction fragment length polymorphism enhanced selection, genetic marker enhanced selection, making double haploids and transformation.

32. A canola plant or parts thereof produced by the method of claim 30, wherein the pedigree of said canola plant includes 5 or less cross-pollinations to a canola plant other than canola line 45A55.

33. A 45A55-derived canola plant, or parts thereof, wherein at least one ancestor of said 45A55-derived canola plant is the canola plant of claim 22, and wherein the pedigree of said canola plant includes 5 or less cross-pollinations to a canola plant other than canola line 45A55.

34. The canola plant, or parts thereof, of claim 22, wherein the plant or parts thereof further comprise one or more transgenes.

35. A method for developing a canola plant in a canola breeding program comprising: obtaining the canola plant, or its parts, of claim 34 and employing said plant or parts as a source of said breeding material.

36. A canola plant or parts thereof produced by the method of claim 35, wherein the pedigree of said canola plant includes 5 or less cross-pollinations to a canola plant other than canola line 45A55.

37. The canola plant or parts thereof, of claim 22, further comprising one or more single gene conversions.

38. A method for producing a 45A55-derived canola plant, comprising:

(a) crossing the canola plant or its parts of claim 22, with a second canola plant to yield progeny canola seed;

(b) growing said progeny canola seed, under plant growth conditions, to yield said 45A55-derived canola plant.

39. A 45A55-derived canola plant, or parts thereof, produced by the method of claim 38.

40. The method of claim 38, further comprising:

(c) pollinating said 45A55-derived canola plant with itself or another canola plant to yield additional 45A55-derived progeny canola seed;

(d) growing said progeny canola seed of step (c) under plant growth conditions, to yield additional 45A55-derived canola plants;

(e) repeating the pollinating and growing steps of (c) and (d) from 1 to 4 times to generate further 45A55-derived canola plants.

41. The further 45A55-derived canola plant, or parts thereof, produced by the method of claim 40.

42. A process for producing 45A55, representative seed of which have been deposited under ATCC Accession No. \_\_\_\_\_, comprising:

- (a) planting a collection of seed comprising seed of a hybrid, one of whose parents is 45A55, said collection also comprising seed of 45A55;
- (b) growing plants from said collection of seed;
- (c) identifying a plant of line 45A55;
- (d) selecting said plant of line 45A55;
- (e) controlling pollination through selfing which preserves the homozygosity of said plant of line 45A55; and
- (f) collecting morphological and/or physiological data so that said plant of line 45A55 may be identified.

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